

SUMAN KUMAR MAITY

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Biographical Data:

Date of Birth: 19th March, 1987
Marital Status: Married
Nationality: Indian

Research Experience and Education:

July 2017-Present:	Assistant Professor of chemistry at Narasinha Dutt College, affiliated to the University of Calcutta.
March 2015-January 2017:	Post-Doctoral research at Technion-Israel Institute of Technology with Prof. Ashraf Brik in the field of “Organic Chemistry Applied for the Synthesis, Modifications and Modulation of Protein Structure and Function.”
October 2013-February 2015:	Post-Doctoral research at Ben-Gurion University of Negev with Prof. Ashraf Brik in the field of “Organic Chemistry Applied for the Synthesis, Modifications and Modulation of Protein Structure and Function.”
June 2014	Received Ph.D. degree in chemistry in the field of “Fabrication of foldamer based materials: Structure and Function” with Dr. Debasish Haldar in the Department of Chemical Sciences, Indian Institute of Science Education and Research-Kolkata, India.
July 2009	Received M.Sc. (Master of Science) degree in Chemistry (Organic Specialization) with First Class, securing 3 rd position in the University of Calcutta, West Bengal, India.
July 2007	Received B.Sc. (Honours) degree in Chemistry with First Class from the University of Calcutta, West Bengal, India.

Awards:

Awarded **DST-INSPIRE FACULTY** award on 19th February 2018, against the announcement call of July 2017 session.

Awarded “**Humboldt Research Fellowship for Postdoctoral Researcher**” by the **Alexander von**

Humboldt Foundation for Postdoctoral Research, March 2017.

Awarded **Groupe de Recherche Universitaire sur le Médicament (GRUM)** scholarship by the University of Montreal, Canada, for postdoctoral fellows to “develop and support interdisciplinary research, training and transfer technology on the discovery and evaluation of drugs”, December 2016.

Awarded **PBC** fellowship by the Council of Higher Education, Israel, for outstanding postdoctoral research fellows from India and China, January 2014.

Awarded Senior Research Fellowship (**SRF**) from the Council of Scientific and Industrial Research (CSIR), India, June 2011.

Awarded **CSIR-UGC NET** for Junior Research Fellowship (**JRF**) in CHEMICAL SCIENCES, Council of Scientific and Industrial Research (CSIR), India, held on June 2008 and December 2008.

Qualified Graduate Aptitude Test (**GATE**) held on February 8, 2009 in Chemistry, organised by Ministry of Human Resource Development, Government of India.

Awarded “Satish Chandra Sinha Memorial Scholarship” for prosecution of post-graduate studies in chemistry in the University of Calcutta in recognition of securing highest marks in B.Sc. in chemistry (2007).

Research Experience and Instrumental Skills:

Post-Doctoral Research:

Organic small molecule synthesis to modulate protein structure and function; δ -mercaptolysine synthesis for chemical ubiquitination through native isopeptide bond; Total chemical synthesis of proteins applying state of the art native chemical ligation and desulfurization techniques, Development of palladium-assisted efficient deprotection methods for Cys protecting groups (Thz, Proc, and Acm) to expedite the synthesis of synthetically-challenging proteins such as Neddylated-Cullin, H2BK34Ub and UBL-5; Chemical synthesis of homogeneously modified histone proteins (acetylated, methylated and phosphorylated H3, phosphorylated H2A) for biochemical and biophysical studies; Development of palladium-assisted removable

solubilizing tag linked through Phacm linker (an analogue of Acm) for facilitating the synthesis of hydrophobic peptides and proteins (e.g. H4); Synthesis of N-hydroxy isopeptide containing ubiquitinated substrate for DUBs (Deubiquitinases) activity study; Analysis and purification of peptides and proteins by HPLC, Mass spectroscopy; Conformational analysis of folded proteins by circular dichroism spectroscopy (CD).

Doctoral Research:

Solution phase peptide and foldamer synthesis; Conformational analysis of peptides and foldamers by single crystal X-ray diffraction study; Morphological study of the peptides and peptide-nanoparticle conjugates by AFM, FE-SEM, TEM and optical microscopy; Solid state room temperature phosphorescence study of pure organic molecules; Tuning the optoelectronic properties of semiconductor nanoparticles (CdS) by doping on peptide matrices, Characterization of peptide-nanoparticle conjugates via Cyclic Voltammetry, Raman Spectroscopy, PXRD; Study of the Photoluminescence (PL) properties of CdS nanoparticles by Confocal Laser Scanning Microscopy and Time Resolved Single Photon Counting (TCSPC) technique; Non-linear optical property study of synthetic peptides through Z-Scan experiment; Drug encapsulation into peptide microspheres and stimuli responsive controlled drug release; Handling TGA/DSC, JEOL 400 MHz and Brüker AVANCE 500 MHz NMR instrument, UV/Vis spectroscopy, FT-IR spectroscopy, Q-Tof Micro YA263 high resolution (Waters Corporation) mass spectrometer, Fluoromax-4 (HORIBA JOBIN YVON) instrument, DLS instrument (model ZETASIZER nano series nano zs), AFM instrument (NTMDT, model no. AP- 0100).

Publications:

31. Total Chemical Synthesis of Histones and their Analogues Assisted by Native Chemical Ligation and Palladium Complexes: **Suman Kumar Maity**, Muhammad Jbara, Guy Mann, Guy kamnesky and Ashraf Brik, *Nature Protocols*, 2017, **12**, 2293.
30. Total Chemical Synthesis of Methylated Analogues of Histone 3 Revealed KDM4D as a Potential Regulator of H3K79me3: Muhammad Jbara, Noga Guttmann-Raviv, **Suman Kumar Maity**, Nabieh Ayoub and Ashraf Brik, *Bioorg. Med. Chem.*, 2017, **25**, 4966.
29. Palladium in Chemical Protein Synthesis and Modifications: Muhammad Jbara, **Suman Kumar Maity** and Ashraf Brik, *Angew. Chem. Int. Ed.*, 2017, **56**, 10644.

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28. Palladium Assisted Cleavage of Peptides and Proteins Containing a Backbone with Thiazolidine Linkage: Muhammad Jbara, Shay Laps, **Suman Kumar Maity** and Ashraf Brik, *Chem. Eur. J.*, 2016, **22**, 14851. (*Hot Paper*)
27. Palladium-Assisted Removal of a Solubilizing Tag from a Cys Side Chain To Facilitate Peptide and Protein Synthesis: **Suman Kumar Maity**, Guy Mann, Muhammad Jbara, Shay Laps, Guy Kamnesky and Ashraf Brik, *Org. Lett.*, 2016, **18**, 3026. (*Selected to be featured in ACS Editors' Choice*).
26. Efficient Palladium-Assisted One-Pot Deprotection of (Acetamidomethyl)Cysteine Following Native Chemical Ligation and/or Desulfurization To Expedite Chemical Protein Synthesis: **Suman Kumar Maity**, Muhammad Jbara, Shay Laps and Ashraf Brik, *Angew. Chem. Int. Ed.*, 2016, **55**, 8108.
25. Palladium Mediated Rapid Deprotection of N-Terminal Cysteine under Native Chemical Ligation Conditions for the Efficient Preparation of Synthetically Challenging Proteins: Muhammad Jbara,[‡] **Suman Kumar Maity**,[‡] Mallikanti Seenaiah and Ashraf Brik, *J. Am. Chem. Soc.*, 2016, **138**, 5069. (Equal contribution).
24. Chemical Synthesis of Phosphorylated Histone H2A at Tyr57 Reveals Insight into the Inhibition Mode of the SAGA Deubiquitinating Module: Muhammad Jbara, **Suman Kumar Maity**, Michael Morgan, Cynthia Wolberger and Ashraf Brik, *Angew. Chem. Int. Ed.*, 2016, **55**, 4972. (Highlighted in *Chemistry-A European Journal*).
23. Chemical and Semisynthesis of Modified Histones: **Suman Kumar Maity**, Muhammad Jbara and Ashraf Brik, *J. Pept. Sci.*, 2016, **22**, 252. (Contribution to the Festschrift in honor of Prof. Stephen Kent's 70th birthday).
22. Synthesis of N-Hydroxy Isopeptide Containing Proteins: **Suman Kumar Maity**, Shimrit Ohayon, and Ashraf Brik, *Org. Lett.*, 2015, **17**, 3438.
21. Chemical Synthesis of Phosphorylated Ubiquitin and Diubiquitin Exposes Positional Sensitivities of E1-E2 Enzymes and Deubiquitinases: Somasekhar Bondalapati, Wissam Mansour, Mark A. Nakasone, **Suman Kumar Maity**, Michael H. Glickman and Ashraf Brik, *Chem. Eur. J.*, 2015, **21**, 7360.
20. Porous Organic Material from Discotic Tricarboxamide: Side Chain–Core interactions: Poulami Jana, Arpita Paikar, Santu Bera, **Suman Kumar Maity** and Debasish Haldar, *Org. Lett.*, 2014, **16**, 38.
19. Inhibition of Fibril Formation by Tyrosine Modification of Diphenylalanine: Crystallographic Insights: Santu Bera, Poulami Jana, **Suman Kumar Maity**, and Debasish Haldar, *Cryst. Growth Des.*, 2014, **14**, 1032.

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18. Photoelectrochemical properties of CdSe quantum dots doped disk-like tripeptide capsule: Santu Bera, **Suman Kumar Maity** and Debasish Haldar, *CrystEngComm*, 2014, **16**, 4834.
17. Fabrication of self-assembled peptidomimetic microspheres and hydrogen peroxide responsive release of nicotinamide: **Suman Kumar Maity**, Santu Bera, Arpita Paikar, Apurba Pramanik and Debasish Haldar, *CrystEngComm*, 2014, **16**, 2527.
16. Halogen bond induced phosphorescence of capped γ -amino acid in solid state. **Suman Kumar Maity**, Santu Bera, Arpita Paikar, Apurba Pramanik and Debasish Haldar, *Chem. Commun.*, 2013, **49**, 9051.
15. Fabrication of microspheres from self-assembled γ -peptides: **Suman Kumar Maity**, Santu Bera, Arpita Paikar, Apurba Pramanik and Debasish Haldar, *CrystEngComm*, 2013, **15**, 5860.
14. Synthetic strategies for the development of fluorescent amino acids as optical probe: **Suman Kumar Maity**, Santu Bera and Debasish Haldar, *Current Organic Synthesis*, 2013, **10**, 525.
13. Hierarchical self-assembly of naphthalene bisimides to fluorescent microspheres and fluoride sensing: Poulami Jana, **Suman Kumar Maity**, Santu Bera, Pradip Kumar Ghorai and Debasish Haldar, *CrystEngComm*, 2013, **15**, 2512.
12. Synthesis and study of 2-acetyl amino-3-[4-(2-amino-5-sulfo-phenylazo)-phenyl]-propionic acid: a new class of inhibitor for hen egg white lysozyme amyloidogenesis: Sibaprasad Maity, Ravi Kumar, **Suman Kumar Maity**, Poulami Jana, Santu Bera and Debasish Haldar, *MedChemComm*, 2013, **4**, 530.
11. Photo-induced charge-transfer complex formation and organogelation by a tripeptide: Poulami Jana, Sibaprasad Maity, **Suman Kumar Maity**, Pradip Kumar Ghorai and Debasish Haldar, *Soft Matter*, 2012, **8**, 5621.
10. Insights into H-aggregates and CH...O hydrogen bond mediated self-assembly of pyromellitic bisimide, Poulami Jana, Sibaprasad Maity, **Suman Kumar Maity**, Pradip Kumar Ghorai and Debasish Haldar, *CrystEngComm*, 2012, **14**, 6586.
9. Conformational heterogeneity, self-assembly and gas adsorption studies of isomeric hybrid peptides: Sibaprasad Maity, Poulami Jana, **Suman Kumar Maity**, Debasish Haldar, *Cryst. Growth Des.*, 2012, **12**, 422.
8. CdS quantum dots doped with a peptide matrix: structural and photoelectrochemical properties: **Suman Kumar Maity**, Sibaprasad Maity, Poulami Jana and Debasish Haldar, *CrystEngComm*, 2012, **14**, 3156.

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7. Self-assembly and nonlinear optical properties of a synthetic dipeptide: **Suman Kumar Maity**, Ravi Kumar, Deepak K. S. Ambast, Bipul Pal and Debasish Haldar, *J. Mater. Chem.*, 2012, **22**, 22198.
6. Luminescent nanoparticles from tripeptide–CdS conjugate: **Suman Kumar Maity**, Sibaprasad Maity, Poulami Jana and Debasish Haldar, *CrystEngComm*, 2012, **14**, 4034.
5. Supramolecular double helix from capped γ -peptide: **Suman Kumar Maity**, Sibaprasad Maity, Poulami Jana, Debasish Haldar, *Chem. Commun.*, 2012, **48**, 711.
4. Sonication-responsive organogelation of a tripodal peptide and optical properties of embedded Tm³⁺ nanoclusters: Sibaprasad Maity, Shyam Sarkar, Poulami Jana, **Suman Kumar Maity**, Santu Bera, Venkataramanan Mahalingam and Debasish Haldar, *Soft Matter*, 2012, **8**, 7960.
3. Mesoporous vesicles from supramolecular helical peptide as drug cargo: Sibaprasad Maity, Poulami Jana, **Suman Kumar Maity**, Debasish Haldar, *Soft Matter*, 2011, **7**, 10174.
2. Fabrication of Hollow Self-Assembled Peptide Microvesicles and Transition from Sphere-to-Rod Structure: Sibaprasad Maity, Poulami Jana, **Suman Kumar Maity**, Debasish Haldar, *Langmuir*, 2011, **27**, 3835.
1. A new peptide motif in the formation of supramolecular double helices: Poulami Jana, Sibaprasad Maity, **Suman Kumar Maity**, Debasish Haldar, *Chem. Commun.*, 2011, **47**, 2092.

Conference publication:

1. Guy Mann, **Suman Kumar Maity**, Muhammad Jbara, Shay Laps, Guy Kamnesky, Ashraf Brik, *Palladium Assisted Rapid Removal of a Solubilizing Tag from a Cys Side Chain to Facilitate Peptide and Protein Synthesis*, The 82nd annual meeting of the Israel Chemical Society and 6th Angewandte Symposium, Tel-Aviv, Israel, February 13-15th, 2017.
2. Shay Laps, Muhammad Jbara, **Suman Kumar Maity**, Ashraf Brik, *Orthogonal Deprotection of Cys Protecting Groups using Palladium(II) Complexes for the Synthesis of Modified Peptides and Proteins*, The 82nd annual meeting of the Israel Chemical Society and 6th Angewandte Symposium, Tel-Aviv, Israel, February 13-15th, 2017.
3. Muhammad Jbara, **Suman Kumar Maity**, Shay Laps, Ashraf Brik, *Palladium Mediated Rapid Deprotection of Cysteine Protecting groups Under Native Chemical Ligation Conditions to Expedite Chemical Protein Synthesis*. 34th European Peptide Symposium and the 8th International Peptide Symposium, Leipzig, Germany, September 6th, 2016.
4. Muhammad Jbara, Mallikanti Seenu, Sachitanand Mali, **Suman Kumar Maity**, Ashraf Brik, “*Synthetic approaches for the efficient preparation of Histone proteins*” the 81st annual meeting of the Israel Chemical Society, Tel-Aviv, Israel, held on February 9th 2016.

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5. **Suman Kumar Maity**, Arpita Paikar and Debasish Haldar, “*Self-assembled peptide spheres as controlled drug release system in physiological condition*” at the symposium of department day celebration, Department of chemical sciences, IISER-Kolkata, India, held on November 7th, 2012.
6. **Suman Kumar Maity**, Sibaprasad Maity, Poulami Jana, Santu Bera and Debasish Haldar, “*Synthetic peptide matrix doped with quantum dots: Structural and photoelectrochemical properties*” at the symposium of Chemical Research Society of India Kolkata chapter, IISER-Kolkata, India, held on August 8th, 2012.
7. Debasish Haldar, Sibaprasad Maity, Poulami Jana, **Suman Kumar Maity**, and Santu Bera: “*Soft materials from foldamers: structure and function*” at Bordeaux 2012, Symposium on foldamers, European Institute of Chemistry and Biology, Bordeaux-Pessac, France, held on Jan 30-Feb 2, 2012.
8. Sibaprasad Maity, Poulami Jana, **Suman Kumar Maity** and Debasish Haldar, “*Stimuli responsive soft material from self-assembled peptides*” at symposium of polymer science, IISER-Kolkata, December 10th, 2011.
9. Sibaprasad Maity, Poulami jana, **Suman Kumar Maity** and Debasish Haldar, “*Molecular self-assembly of synthetic peptides into porous materials*” at UGC sponsored international symposium on “Recent trends of research in chemistry” Midnapore College, India, held on October 31 to November 1st, 2011.
10. **Suman Kumar Maity** and Debasish Haldar, “*Double helical foldamer*” at the 1st in house symposium of IISER-Kolkata, India, held on December 30-31, 2010.

Teaching Experience:

07/2010: Teaching assistant to Dr. Soumyajit Roy at IISER-Kolkata in practical course of BS-MS 1st year, “Identification of functional groups of organic compounds.”

07/2009-9/2013: Have trained 2 master students, junior PhD students during my PhD tenure from

10/2013-01/2017: Have trained 4 master students and one PhD student during the post-doctoral research tenure.

07/2017-Present: Teaching organic chemistry at Narasinha Dutta College.

References:

Dr. Debasish Haldar

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Indian Institute of Science Education and Research-Kolkata,
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